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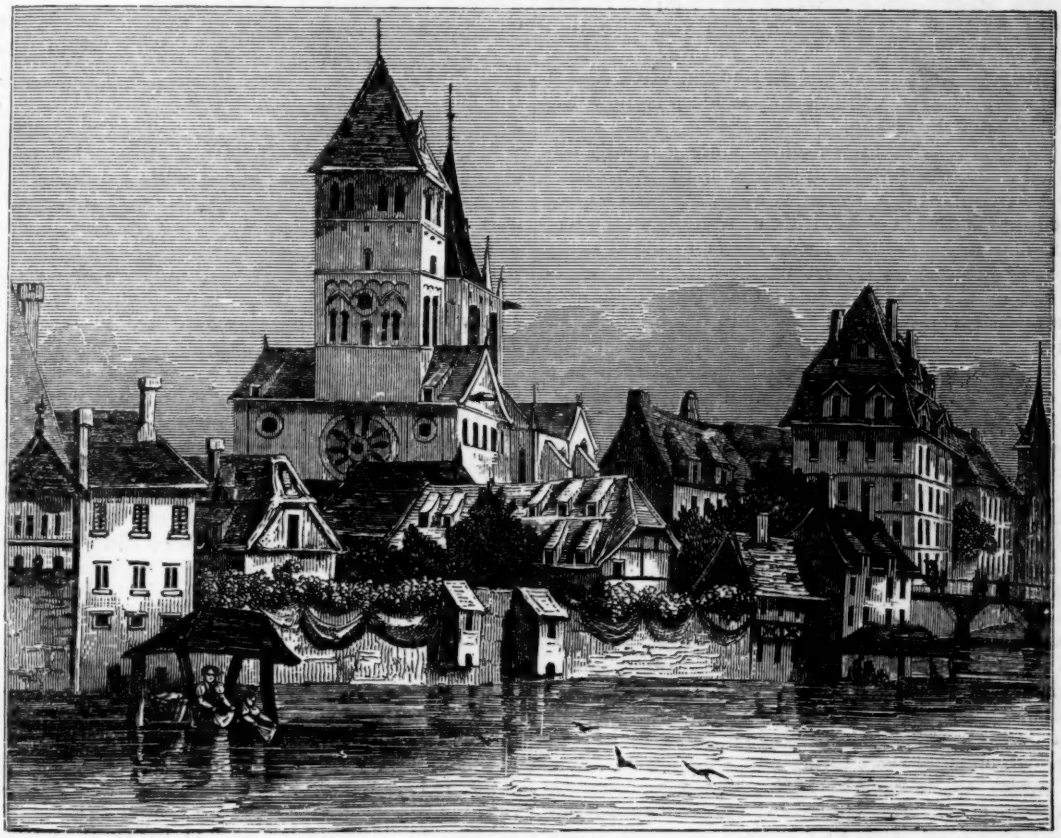
STRASBOURG ON THE RHINE. No. II.



VIEW IN STRASBOURG.

We concluded our last article with a notice of the Cathedral of Strasbourg; let us now proceed to the Church of St. Thomas, in which the most conspicuous object of curiosity is an elaborate monument to the memory of Marshal Saxe:—it was the most celebrated production of Pegalle, and was erected at the expense of Louis the Fifteenth of France. Marshal Saxe was a great general, though rather a dissipated man, and his sovereign erected this monument,—not to the man,—but to the general. The background of the monument is a broad, tall pyramid of grey marble, built against the wall of the church. The pyramid terminates below in a few steps, on the lowest of which is a sarcophagus. The marshal is represented in the act of descending the steps towards the tomb. On the right the symbolical animals of England, Austria, and Holland, are flying from him in dismay; on the left, the banner of France is floating in triumph. The warrior's eye is fixed with an expression of tranquil contempt on a figure of Death standing below, thrusting out his raw head and bony arms from beneath a shroud. This figure is holding up to the marshal, in one hand, an hour-glass, in which the sand has run out, and with the other, is opening the sarcophagus to receive him. A female figure, representing France, throws herself between them, exerting herself at once to hold back the Marshal, and to thrust away death. On one side of the whole, a genius weeps over an inverted torch; and on the other is Hercules leaning on his club. The whole of these figures are as large as life, and are cut in marble.

The Town Hall is a large and noble structure, and has its façade ornamented with antique paintings. The edifices devoted to commercial purposes, though not elegant, are numerous and convenient, and fitted for the commerce of the town, which comprehends the usual description of imports, and the following exports:—corn, flax, hemp, wine, spirit, linen, sail-cloth, blankets, carpets, hardware, leather, cotton, lace, tobacco, snuff, &c.

The Protestant academy is one of the best of that class in France: as a place of instruction it may rival the most celebrated in Germany. It possesses a good collection of philosophical instruments, and a museum of comparative anatomy, in which all the articles are arranged according to the most approved scientific method. There is a chemical laboratory, and a valuable collection of objects in different branches of natural history. Each faculty in the

academyhas a separate library; but there are, besides, wo other libraries, one belonging to the observatory, and the other open to the public. The last-mentioned library contains 55,000 volumes; and as a relic of an honoured townsman, it is made the repository of the sword of General Kléber, and of the stiletto of his assassin.

The Medical School of Strasbourg, after being long an academy, was constituted an university in the seventeenth century. It was curtailed in the number and importance of its classes at the time of the French Revolution, but was replaced on its former footing in 1803. It was in the same year also that the Protestant University was established.

The once Royal Castle of Strasbourg, when Alsace was a province of political importance, is now the residence of the bishop.

There are perhaps few feelings more generally diffused than an affectionate regard from the inhabitants of a particular town, towards any native of that place who may have raised himself in reputation for great or good actions. The truth seems to be, that the inhabitants feel as if part of the honour which devolves on the man, belongs to the town which gave him birth; and they feel proud in owning him as a brother townsman. Vanity may have something to do with this, but it is unquestionable that it is a kindly and praiseworthy feeling.

Strasbourg is not behind other cities in this respect. An obelisk to the memory of General Kléber is erected on a piece of ground near the town, at present a place for the exercise of artillery. Jean Baptiste Kléber was born at Strasbourg, in 1754. His father was a common labourer, and young Kléber was himself peacefully occupied as an architect, when the political events of the day turned his attention to a military life. From 1776 to 1783 he served in the Austrian army, against the Turks. Having entered as a simple grenadier, in a French volunteer corps, in 1792, his talents soon procured him notice; and, after the capture of Mayence, he was made General of Brigade. It is to the credit of Kléber, that although he continued to serve in the French army, he openly disapproved of the atrocities which were too often witnessed at Paris. He joined Napoleon in the Egyptian expedition, and so distinguished himself, that when Napoleon returned to Europe, he left Kléber in command of the French army. Here he had to contend against countless difficulties, and at last fell a victim to the stiletto of a Turkish assassin, on the 14th of June, 1800. The Strasbourgers, proud of the man who had raised himself from the rank of a peasant to that of commander of an army, erected an obelisk to the memory of their townsman.

There is also an obelisk to the memory of General Desaix, which rises behind the citadel, on an island opposite the village of Kehl. This spot seems to have been selected from the circumstance that in November, 1796, he greatly distinguished himself by his defence of the bridge at Kehl, while serving under Moreau, in the army of the Rhine.

Another distinguished native of Strasbourg, was General Kellerman, who was born there in 1735. He was a general in the French army, and one of the few who survived the eventful period of the revolution; and, when he died in 1820, ordered his heart to be buried on the field of Valmy, where he had greatly distinguished himself twenty-eight years before.

If we quit the arena of warfare, and enter upon the more tranquil and pleasing subject of mental improvement, we find Strasbourg to be distinguished as the first place in which the art of printing was carried on with moveable types. John Gutenberg, whose real name was Henne Gaüsefleisch von Sorgenloch, was born in 1396 at a small village near Mentz. When a young man, he became implicated in an insurrection of the citizens of Mentz against the nobility, and he was forced to flee to Strasbourg. In 1436 he entered into a contract with Andrew Dreizehn, and others, binding himself to teach them certain secret arts, and to employ them for their common advantage. The death of Dreizehn, which happened soon after, frustrated the proceedings of the company, which is supposed to have had reference to the art of printing. Gutenberg became involved in lawsuits, but at last succeeded, in partnership with Faust, a rich citizen of Mentz, in putting his noble discovery into execution. But an interested party opposed itself to his progress, and succeeded in driving him from the town in exile, —a fate which too much resembles that of many other benefactors of mankind. Posterity has acknowledged his merits by erecting, in 1837, a splendid monument to his memory at Mentz.

The management of the Charitable Institutions, as well as prison discipline, at Strasbourg, is said to be highly creditable to the good sense and good feeling of the inhabitants, and worthy of the imitation of other towns.

There is perhaps no town either in France or in Germany, in which the manners, customs, and languages of both nations are more mingled together than at Strasbourg. There are many reasons for this. Strasbourg is the most eastern town in France, and is only separated from Germany by the width of the Rhine; the common intercourse of persons on the opposite sides of a river, for the purposes of commerce, would alone be sufficient to occasion a considerable admixture of customs in the place. But there are other circumstances tending to the same point. Strasbourg is altogether a German name, and the town formed a part of Germany for many centuries,—hence its German associations. On the other hand it has formed part of the territory of France for the last hundred and fifty years, and therefore has necessarily imbibed a large share of French manners. It appears, in this, as in many similar instances, that the wealthier part of the inhabitants adopt the modes and speak the language of the court to which they belong, while the humbler classes adhere, to a considerable extent, to the language and manners of their forefathers. This seems to be the case in Strasbourg: the educated inhabitants speak French, while the more simple and humble adhere to their original German.

The same mixture of two nations is visible in the diet and modes of cooking. Mr. Russell, speaking from a personal visit to Strasbourg, thus remarks on this subject:—"At Strasbourg you may dine on dishes as impenetrably disguised, or languish over *entremets* as nearly refined away to nothing, as at the tables of the great Parisian rivals, Very and Vegours; or, on the other side of the street, for half the money, you may have German fat, plain boiled beef, and some cabbage. The German kitchen is essentially a plain, solid, greasy kitchen: it has often by far too much of the last quality. People of rank, indeed, in the great capitals, are as mad on French cookery, as the most delicate of their equals in London; but the national cookery, in its general character, is the very reverse of that of France; and it is by no means certain that the national cookery of a people may not have some connexion with its national character. The German justly prides himself on the total absence of parade, on the openness, plainness and sincerity which marks his character; accordingly he boils his

beef, and roasts his mutton and fowls just as they come from the hands of the butcher and poulterer."

If we wish to become acquainted with the national style of dress of a particular people, we shall do wrong to go to their capitals, or their chief cities; because there is a very general tendency among the wealthy of one town to copy the style of dress of those in another. It is in the villages and sequestered places that the really national costume may be expected to reside. In describing the dress of the Strasbourgers, therefore, it will be better to go a little out of the town, and take our models from the inhabitants of the villages between Strasbourg and Haguenau. They go to mass or to the Reformed Church, in their best dresses. A square black coat is purposely left open to show a red waistcoat, with gilt buttons. Loose boots made of soft leather, or long gaiters, are attached to black rateen breeches. A broad hat completes the costume. The dress of the women has been thought to be more graceful; it is certainly more showy. The hat does not conceal flowing ringlets, or ribbons of various colours, but the latter are worn only by the young, and never by married women. Long gilt pins serve to fasten the hair, and rise in the form of a coronet. A black silk handkerchief covers the neck, and the bodice is adorned with many ornaments. Broad sleeves of white linen descend to the waist.

THE RAPIDS OF THE ST. LAWRENCE.

In the various modes of water-conveyance to which the traveller on this globe is subjected, there is perhaps no one more curious than that of descending one of the great rapids of America, in a small bark canoe, under the command, as is customary, of two Indians; and the anxiety to witness this spectacle is perhaps not at all disagreeably spiced by that still, warning voice of reason, which gravely admonishes the traveller that his undertaking, interesting as it may be, is not altogether divested of danger.

Besides the rocks, shoals, and snags, which are to be avoided, unceasing attention must be given to the innumerable logs of hewn timber, which, having been wafted by the lumberers to the commencement of the rapid, are then left to be hurried for eight or nine miles towards their market—sometimes separately, sometimes hustling each other, sometimes floundering, and sometimes, if anything irritates or obstructs their passage, rearing up in the water, until they almost reel over. As soon as a berth or clear place is observed between these masses of floating timber, the elder Indian, who is seated at the head of the canoe, his younger comrade being at the stern, and the passenger in the middle, calmly lets go his hold of the bank, and the two Indians, each furnished with a single paddle, immediately standing up, the frail band-box which contains them indolently floats until it reaches the edge or crest of the rapid—which is no sooner passed, than the truth rushes upon the mind of the traveller, that all possibility of stopping has ceased, and that this "hubble-bubble, toil and trouble" must continue until the eight or nine miles of the rapids shall be passed.

In the apparent turmoil of the scene, in which the canoe is preceded, as well as followed, by masses of huge timber, the slightest touch of which would annihilate it—the icy-cold judgment of the old Indian—his collected but lightning-like decision—the simplicity and tranquillity of his red, beardless face, thatched over with his bluff-cut, black, lank hair—his total absence of fear or bravado—his immutable presence of mind—and, in places of the greatest possible noise and confusion in the waters, the mild tone of voice with which he softly utters to his young comrade the monosyllable that directs him to steer the stern of the canoe in the direction opposite to that which he gives to its head—form altogether a most striking contrast with the boisterous scene, the sudden kaleidoscope changes of which it is utterly impossible to describe; for one danger has been no sooner avoided than, instead of reflecting upon it for a moment, the eye is attracted to a second, as suddenly passed and succeeded by a third. Sometimes the canoe rapidly dashes over a sunken rock, or between two barely covered fragments, which to have touched would have been ruin; in avoiding these a snag is passed, which would have spitted the canoe had it impinged on it; sometimes the middle of the stream is the safest; sometimes the Indian steers close to the steep, rocky bank, where it becomes evident the velocity of the current is so great, that if the canoe were to be upset, its passengers, even if they could snatch hold of the bough of a tree, could not hang on to it, without being suffocated by the resistance which in that position they would offer to the rushing waters. Sometimes, at a moment when all is apparently prosperous, and the water, on account of its greater depth or breadth, has become comparatively tranquil, some of the timber a-head, going down head foremost, strikes either against the side, or some sunken rock in the middle of the stream, in which case the tree suddenly halts, and, veering round, impedes the rest of the timber, until the congregated mass, forcing its way, thus clears the passage, perhaps just before the canoe reaches it. At other times, in traversing the stream to avoid difficulties, the pursuing timber approaches the canoe nearer than is agreeable. In some places the river suddenly narrows, and here, it is said, the waves are not only tremendous, but the whole character of the torrent seems to be changed, for the water apparently ceases altogether to descend the channel, doing nothing but as it were boiling and bubbling up from the bottom. In approaching this caldron, the case seems hopeless, and often continues so until the canoe is close upon it, when the Indian's eagle eye searches out some little aqueous furrow, through which his nutshell vessel can pass, and though his countenance is as tranquil as ever, yet the muscular exertion he makes to attain this passage will not, it is said, easily be forgotten by any passenger whose fortune it has ever been to observe it. As soon as the declivity of the rapids has ended, the water instantly becomes tranquil, the Indians sit down in the canoe, and, on reaching the shore, one of them carries it on his shoulders during the remainder of the day.—*Quarterly Review*

Man was formed with an understanding, for the attainment of knowledge; and happy is he who is employed in the pursuit of it. Ignorance is in its nature unprofitable; but every kind of knowledge may be turned to use. Diligence is generally rewarded with the discovery of that which it seeks after; sometimes of that which is more valuable.

Human learning, with the blessing of God upon it, introduces us to divine wisdom; and while we study the works of nature, the God of nature will manifest himself to us; since, to a well-tutored mind, "The heavens," without a miracle, "declare his glory, and the firmament sheweth his handy-work."—Bishop Horne.

It is well said that nothing is lost. The drop of water which is spilt, the fragment of paper which is burnt, the plant that rots on the ground, all that perishes and is forgotten, equally seeks the atmosphere, and all is there preserved, and thence daily returned for use.—Macculloch.

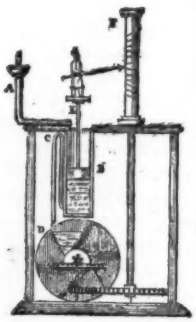
ON THE EARLY MODES OF MEASURING TIME.

No. IV. THE CLEPSYDRA, OR WATER-CLOCK.

As the sun-dial can be of no use when the sun is clouded, and during the time between sunset and sunrise, whether that period be more or less than twelve hours, we find that, from a very early period, the lapse of equal intervals of time was noted by the dropping of water from one vessel into another, the rapidity of the flow being adjusted to the size of the vessels.

The general title of *Clepsydra* was given to these instruments; that being the name originally given to the first instrument of the kind used at Athens. It is derived from κλεπτω, (I steal), and ὑδωρ (water),—evidently alluding to the *stealthy* way in which the water flowed from them. Clepsydras were in general so arranged that a given quantity of water flowed out in exactly half a day, or in exactly a whole day, as might be deemed most desirable; and the aperture, by which the water escaped, was so adjusted that an equal quantity should flow out every hour. This being the groundwork of the arrangement, the form and minor details of the instrument were various. Thus Ctesibius, an Egyptian, who flourished in the second century before the Christian era, is said to have constructed a little model of the human figure, of which the head had a dejected and drooping appearance. This is not shown in the figure. Tears dropped from his eyes into a vessel containing water at A, whence it flowed through a pipe into the cistern B, upon the surface of which another little figure floated, placed on the top of the rod E, who had a wand in his hand, which pointed to the day and hour on a pillar near him.

Now the cistern B, having been emptied at the close of one day, was filled from A, in another day of twenty-four hours; and when the water which rose in the leg of the siphon-tube connected with the cistern, flowed over the part C, the cistern was again emptied by this siphon into one division of the water-wheel at D, which was caused to turn a certain space downwards, by the weight of the water thus thrown out. This wheel has a pinion, which sets a toothed wheel in motion, which, by its axis, moves another wheel below. The consequence of this arrangement is, that the column F turns round once in a year, or $\frac{1}{365}$th of a circle in one day. The column has straight lines, lengthwise, according to the days of the year, and curved lines, round it, answering to the hours of the day; these latter vary in their distances according to the lengths of the hours, which with many of the ancients were longer in Summer than in Winter. The day, therefore, was just ending, when the float was up even with C, and began as soon as B became empty.



Descriptions have been handed down to us of clepsydras in which the flowing of water combined with the mechanical action of wheel-work, enabled the observers to note, not only the division of a day into hours, but also the age of the moon, and the position of the sun in the ecliptic. Vitruvius, the celebrated writer on architecture, gives descriptions of clepsydras, which not only afforded astronomical information, but blew trumpets, projected stones, and performed other wonderful offices.

The invention of clepsydras appears due either to the Babylonians, or to the Egyptians,—most probably to the latter. In support of which supposition reference has been made by some writers to the ancient Nilometers, or Canobs, as having possibly suggested the idea. The nilometer was a tank, or cistern, containing water; and an officer was deputed to observe the quantity of water in the tank, so that it should serve as an index to the state of the Nile. The fertility of that remarkable country was and is dependant greatly on the overflowing of the Nile; and persons, by inspecting the nilometer, were enabled to judge of the rapidity of the rise or fall, by the aid of a graduated scale placed inside the tank. Such an indication of seasons by the flowing of water might have suggested the idea of measuring the hours of the day by similar means.

But, be that as it may, the water-clocks found their way into Greece, and about two centuries before the Christian era, Scipio Nasica, the cousin of Scipio Africanus, brought one to Rome. Clepsydras were, from their construction, rather costly, one being considered sufficient for each town. It was situated in an open place, and the nobles and wealthy families used to employ servants (generally boys or girls) to acquaint them with the time, as indicated by the public clepsydra, which was always attended or guarded by a slave. The humbler classes had also the means of knowing the time at stated periods, when the city guard was changed. The attendant of the clepsydra blew a horn at regular intervals, as a signal for the changing of the guard, and the sound of the horn could be heard to a considerable distance. Cicero relates that, in the Roman courts of justice and in the senate, clepsydras were kept, to confine the speeches of the advocates and senators within due limits: hence, a forward, noisy speaker,—a brawler or wrangler,—was said "to bark at the clepsydra," a term applied to those who talked with great volubility and pertinacity during the time allotted to them for their speeches. This allotted time was regarded with jealous eagerness by the speakers, and, in order that no fraud or deceit might be practised, an officer was appointed to distribute the water equally to both parties. The speakers were so careful not to lose or mis-spend their time-measuring water, that, if at all interrupted, they would stop the flowing of it during the continuance of the interruption. If, however, any person had ended his speech before the time allowed him had expired, he was permitted to give the water that remained in the clepsydra to another speaker, who by that means was enabled to lengthen his own speech. These instruments were afterwards kept as articles of necessity in the houses of the great.

Cæsar, when he conquered Britain in the year 54 B.C., is said to have seen a clepsydra there, and by its indications, to have observed that the length of the day (as distinguished from night) was, in the Summer months, greater in Britain than at Rome. This fact, respecting the length of the day, is owing to the greater northern latitude of Britain; but how such an instrument came into the hands of the Britons, whether it was the result of their own invention, or borrowed from their southern neighbours, we have not now the means of determining

It is at all times difficult to trace the extension of the use of a process or an instrument from one nation to another. The comparatively recent invention of printing leaves the history of many ingenious inventions in the uncertain and perishable form of manuscript, or still less certain, that of oral tradition. For instance, it was not until within a few years, that a translation of a Hindoo book has brought to our

knowledge the fact that clepsydras were known in India 700 years B.C. The Hindoos, however, were, of old, skilled in mathematics and astronomy.

The invention of clocks and watches brought both the sun-dial and the clepsydra very much into disuse. Tycho Brahé, the celebrated astronomer in the sixteenth century, measured the motions of the stars by means of a clepsydra; but since his time it has been very little else than a philosophical toy, and is now only regarded as a relic of former days. They were much in use in the dark ages, and were found made of tin in France and Italy in the seventeenth century.

Another mode in which clepsydras have been constructed, is that of a cylindrical column of water, of a definite height, with a small hole in the bottom of the vessel, for the water to escape. Suppose, in the annexed figure, such a column to be one hundred inches in height, and that the water was found to occupy exactly ten minutes in flowing out: one side of the vessel must be divided by marks or lines into ten parts; so that when the water had sunk, say from 10 to 9, we should know that one tenth of the time had elapsed since the water began to flow. Before the laws which regulate fluid bodies were well understood, there was great inaccuracy in the construction of this form of clepsydra; but Ctesibius applied himself to the removal of such errors, and found that, in conformity with those laws, the marks or divisions for the hour-lines of a clepsydra must not be equidistant, but must decrease in distance in a certain ratio from above, downwards. When the vessel is full, the water flows out more rapidly from the hole in the bottom, than when it is but half full; and in the latter case more rapidly than when only one quarter full, and so on. This being the case, it is found that the divisions must be regulated thus: suppose the vessel, as before, to be one hundred inches in height, and of equal diameter throughout; then the different portions of water between 10 and 9, 9 and 8, &c., flow out in equal times, one minute for each portion. If we now look to *quantity*, we find that there flows out in the first minute the difference between 100 and 81, equal to 19 inches in height of water; in the second minute 17 inches and so on. The higher the column, the more quickly the water flows out, in consequence of the pressure from above; so that a greater quantity flows out in a given time, at the early part of this clepsydra's action than at the close. By inspecting the figure we observe that the quantity which flows out in a given time is *as the square of the time.*

There have been two modes suggested, by which the divisions may be equidistant. One is by having the vessel not cylindrical, but parabolical; that is, something like a bee-hive turned upside down, with a small hole in the middle: in this case the greater diameter of the open end would counterbalance the greater velocity of the flow when the vessel was full. The other suggestion is to let water flow from one vessel to another, through a siphon tube of very small bore. One of the properties of the siphon is that liquids flow through it with a constant degree of rapidity, and this has caused it to be employed as a water-clock. A clepsydra, on this principle, was deposited in the National Repository a few years ago by Mr. Partington.

The ancients sometimes employed as clepsydras hollow globes, and at other times open cups, the globe and the cup each having a small hole in the bottom. The instrument was made to float upon water, which, gradually entering at the little hole, filled the space within, and after the lapse of a certain time, the globe or cup would sink.

There were anciently clepsydras, in which the liquid employed was mercury or quicksilver: it is indeed obvious that any liquid may be made available for this purpose, by regulating the size of the orifice accordingly.

THE PRISONER OF THE LORD.

A SABBATH HYMN FOR A SICK CHAMBER.

THOUSANDS, O Lord of hosts! this day
Around thine altar meet;
And tens of thousands throng to pay
Their homage at thy feet.

They see thy power and glory there,
As I have seen them too;
They read, they hear, they join in prayer,
As I was wont to do.

They sing thy deeds, as I have sung,
In sweet and solemn lays.
Were I among them, my glad tongue
Might learn new themes of praise.

For thou art in the midst, to teach,
When on thy name they call;
And thou hast blessings, Lord, for each,
Hast blessings, Lord, for all.

I, of such fellowship bereft,
In spirit turn to thee.
Oh! hast thou not a blessing left?
A blessing, Lord, for me?

The dew lies thick on all the ground,
Shall my poor fleece be dry?
The manna rains from heaven around,
Shall I of hunger die?

Behold thy prisoner; loose my bonds,
If 'tis thy gracious will.
If not, contented in thine hands,
Behold thy prisoner still!

I may not to thy courts repair,
Yet here thou surely art:
Lord, consecrate a house of prayer
In my surrendered heart.

To faith, reveal the things unseen;
To hope, the joys untold;
Let love, without a veil between,
Thy glory now behold.

Oh! make thy face on me to shine,
That doubt and fear may cease;
Lift up thy countenance benign
On me, and give me peace.

JAMES MONTGOMERY.

FASTIDIOUSNESS, the discernment of defects, and the propensity to seek them, in natural beauty, are not the proofs of taste, but the evidences of its absence: it is at least an insensibility to beauty; it is worse than that, since it is a depravity, when pleasure is found in the discovery of such defects, real or imaginary. And he who affects this, because he considers it an evidence of his taste, is, at least, pitiably ignorant; while not seldom punished by the conversion of that affectation into a reality. And it is the same in criticism, as applied to works of literature. It is not the eye for faults, but beauties, that constitutes the real critic, in this, as in all else: he who is most discerning in the beauties of poetry, is the man of taste, the true judge, the only critic. The critic, as he is currently termed, who is discerning in nothing but faults, may care little to be told, that this is the mark of unamiable dispositions or of bad passions; but he might not feel equally easy, were he convinced that he thus gives the most absolute proofs of ignorance and want of taste.—MACCULLOCH.

THE BAMBOO.

The tree-like size of these plants associates them in some measure with palms. They are applied, in China, India, and Japan, to a great number of useful purposes: sections of the small ones are made into cups, and of the larger ones into tubs and boxes. Water-pipes are often made of them, and they are used in the construction of fences, building houses and boats, and making various articles of furniture. The tender tops of the young shoots form a favourite West India pickle.

Perhaps the best idea, though still a faint one, of the beauty and magnificence of these arborescent grasses, may be given to the untravelled naturalist, by quoting Capt. Basil Hall's account of the impression a first view produced on him. He says, Early in the morning of a beautiful day in the latter end of September, I set out from the bare table-land of Mysore, and proceeded towards the hilly and thickly-wooded regions overhanging the Malabar country. When I awoke in my palankeen, I knew not very distinctly where I had got to, for I had been dreaming all night about the monstrous statue at Shrivaabalagol. I sat up, drew the door gently back, and, looking out, found myself in the midst of one of the most curious and magnificent scenes which my eyes had ever beheld. It appeared as if I were travelling among the clustered columns of some enormous and enchanted Gothic cathedral, compared to which the minster at York, or the cathedral at Winchester, would have seemed mere baby-houses; the ground extended on all sides as smooth and flat, and clear of under-wood, as if the whole had been paved with grave-stones.

From this level surface rose on every hand, and as far as the eye could penetrate into the forest, immense symmetrical clusters of bamboo, varying in diameter at their base from six feet to twenty or thirty; and even to twice that width, as I ascertained by actual measurement. For about eight or ten feet from the ground, each of these clusters or columns preserved a form nearly cylindrical, after which they began gradually to swell outwards, each bamboo assuming for itself a graceful curve, and rising to the height, some of sixty, some of eighty, and some even of one hundred feet in the air,—the extreme end being at times horizontal, or even drooping gently over, like the tips of the feathers in the Prince of Wales's plume.

These gorgeous clusters stood at the distance of fifteen or twenty yards from one another, and, being totally free from the interruption of brushwood, could be distinguished at a great distance—more than a mile certainly, in every direction, forming, under the influence of an active imagination, naves and transepts, aisles and choirs, such as none but a Gothic architect ever dared to conceive. Overhead the interlacing curves of the bamboos constituted as complete a groined roof as that of Winchester or Westminster, on a scale of grandeur far beyond the bold conception even of those wonderful artists who devised that glorious school of architecture, which, in the opinion of many people, has raised the dark centuries immediately subsequent to the era of the crusades, almost to the level of the days of Pericles.

On counting the separate bamboos in some of the smallest, and also in some of the largest clusters, I found the numbers to vary from twenty to thirty, to upwards of two hundred; and the height generally from sixty to a hundred feet from the ground, to the point of intersection of the curves overhead. Most of the bamboos were somewhat thicker than a man's thigh at the ground, where, as I have before said, they are clustered so close as to be almost in contact. They then taper off very gradually to the extreme end, where the point is not thicker than a quill.

There occurs a joint at about every foot and a half, distinguished not only by a slight flat ring or fillet, but by a set of small branches, eight or ten feet long, striking out at right angles to the main bamboo. These minor shoots are again divided into joints, from which other series of shoots, still more minute, are thrown out; and so on for many successions, the last always terminating in a sharp-pointed narrow leaf, two or three inches long, and half an inch wide in the middle, not unlike a large tea-leaf when spread out. As each bamboo, of the hundred or more forming the cluster, sends out shoots from every joint, and as all the joints of these subordinate plants do the same, a compact mass is formed by these innumerable little branches, which cross one another at every possible angle. If a person were to fill a hat full of pins and needles, and shake it about for some minutes, it might give a notion of the inextricable confusion which is presented to the eye on looking into one of these clustered columns of bamboos. It is only at the top, where the bend takes place, that the foliage has full room to play, or where the tapering arms of this magnificent plant form, by their meetings and crossings, a complete system of pointed arches.

What surprised me very much, and greatly puzzled me at first, was, to observe, that notwithstanding the multitude of lateral shoots from each of the main bamboos, and from all the subordinate branches, not a single trace of displacement, or the slightest obstruction to the growth of any branch, could be detected. Every person must have heard of the astonishing rapidity of the growth of the bamboo; it is said indeed that in one season it starts up to its whole length. I do not know if this be true, but am quite certain that if one of the main bamboos were to spring from the ground in the centre, or even near the sides, of the cluster, and that from its joints there were at the same time to sprout out the lateral branches I have described, it would be impossible for the main stem to force its way through the obstructions presented by the network, formed by the little branches growing from the joints of the other bamboos in the cluster.

After examining a considerable number of the clusters, however, we can, I think, perceive how nature manages this difficult affair. When the bamboo first springs out of the ground, it is about as thick as a man's wrist; but it is armed with a very sharp point, not unlike that of a wooden instrument called a fid, which sailors make use of in splicing ropes; as this point is extremely hard, and the bamboo always highly polished, it readily makes its way through the very thickest masses of the little branches, as one might thrust a sword through a quickset hedge. Thus the bamboo, whose growth is prodigiously rapid, starts upwards; and by reason of its smooth sharp end, and perfectly smooth sides, easily makes its way to its extreme length and thickness; without, as I conceive, sending out a single lateral shoot from any of its joints, till the utmost extent has been gained. The subordinate branches from the joints then, but not till then, begin to start out horizontally, all these being, after the manner of the principal stem, exempted from lateral shoots at their joints till their utmost length has been reached. In consequence of this beautiful arrangement, none of these successive branches, however numerous or delicate, find any difficulty in piercing the confusion.

I saw bamboos in every different stage of this process, and in particular I noticed several of the main stems rising to the height of seventy feet and upwards, of a clear yellow colour, and evidently of recent growth, but without a single lateral branch growing from their joints from top to bottom; and this led me to infer that their extreme height had not yet been reached, or was but just attained.

CONTRIVANCES OF ANTS.

A GENTLEMAN in the Island of St. Croix, instituted several experiments with reference to ascertaining the truth of what he had been often told, of the ingenuity, and apparent reasonings, of the ant of that beautiful island. Having slain a centipede, which had been sent him by a friend, he laid it on the window-stool within his apartment, where, though not a single individual of that mischievous race of vermin had been seen, to his great gratification, in the course of a few hours, one solitary ant suddenly made its appearance through a crevice in the casing, attracted, probably, by the odour of the dead body. Shortly after, having surveyed the premises, it disappeared, but speedily returned, with a host of companions, to whom the discovery of a prize had unquestionably been communicated; a more careful survey of the magnitude of the object was evidently instituted. The whole company then disappeared simultaneously through the crack; but an army was put in requisition, for the third appearance was a multitude.

Having mounted the carcass, examined minutely its exact position, and satisfied themselves that it was actually bereft of life, and that no danger would be incurred from their premeditated operations, a new and unlooked-for series of labours were commenced, bearing such a striking analogy to human reason, as manifested in what is commonly called contrivance, that if there is no intelligence in it,—why, the metaphysicians have in reservation an unexplored field of observation. Not being able to move the mass entire, they divided themselves into platoons, and cut the body into portions of about half an inch in length, which was effectually and skilfully done, between a late hour in the afternoon and the following night, and each piece transported to their citadel, through some contiguous aperture, of sufficient diameter to allow the loads to pass. When the observer arose at daylight, every part had been carried away but the head, which was really moving off towards the hole, surrounded by an immense concourse of admiring spectators, probably on the *qui vive*, happy in the delightful anticipation of future feasts and revellings. On further scrutiny, he found that the decapitated head was mounted on the backs of about a dozen bearers, who, like a Roman phalanx with a testudo upon their shoulders, were marching off in an orderly manner, towards the same orifice through which all the rest had disappeared.—?

I CONFESS myself to be one of those who believe, that it is not always in the capital, or among the busy haunts of a large town, that a traveller has the best opportunities of making himself acquainted with the character, and habits, and dispositions of a strange people. To the capital you doubtless turn, if your object be to examine into the machinery of the general government, or to hold converse with the great and distinguished members of the community, whether they deserve to be so accounted because of any merit attaching to themselves, or owe their greatness to circumstances not of their own creating. But of the people, properly so called, a foreigner can see in the capital very little. He may join them in their public amusements; he may observe their modes of buying and selling; he may listen to their conversation in the streets, or at a table d'hôte, and form a correct enough judgment of their skill as artisans; but of their character properly so called, that is to say, of the temper of their minds, and of the causes which produce it, he can know nothing. The state of society in one large town resembles, in all essential points, so closely the state of society in another, that the traveller becomes bewildered, and is not unapt to treat as peculiarities in one place, habits which, in point of fact, extend far beyond it.—GLEIG'S *Travels in Germany*, &c.

ON WRITING MATERIALS.

No. X.

IN the former articles of this course, we have considered, at some length, the most important and interesting writing materials. Those which remain to be described are slates and slate-pencils, writing tablets, pen-knives, and pounce.

Writing Slates. These useful articles are made of the same material as the slates for the roofs of buildings, but prepared and smoothed with more care.

The principal sources of slate in England are Cornwall and Devon; various parts of North Wales, and of Anglesea; near Ingleton, and in Swaledale, on the North West of Yorkshire; in Cumberland and Westmoreland. It also occurs in a low range of mountains at Chamwood Forest, in Leicestershire, nearly in the centre of England.

France possesses very valuable slate quarries, in which fossil organic remains are found embedded, in great abundance, in the slate. Vestiges of shrimps have been found so numerous, that forty of them have been found in a square foot of slate. In Italy, slate has been found at Lavagna, near Genoa. In Switzerland, it occurs in the Canton of Glaris. Some is also found in Saxony; a great quantity in North America, and in other parts of the world.

Slate is in most cases worked in open quarries, by digging away the upper strata of the ground until the slate is met with. There are only two instances in England in which slate is worked in a mine, by digging a shaft, nd then excavating galleries, in the manner of coal-mines.

One of the mines of slate in France, is near Charleville, and the following is a description of it. The mouth of the mine is near the summit of a hill. The stratum of slate is about sixty feet in thickness, and inclines downward at an angle of 40°. It has been excavated, by a principal gallery, to the depth of 400 feet; and many lateral galleries have been driven, which extend about 200 feet on the side of the main gallery. Twenty-six ladders are placed against the main gallery, for the passage of the workmen and the carriage of the slate. The slate is cut into blocks of about 200lbs. weight, which they call *faix*. Every workman, in his turn, carries them on his back to the very mouth of the pit, mounting the twenty-six ladders, or a part of them, according to the depth of the bed where he is working. When brought into the open air, these blocks are first split into thick tables, which are called *repartons*. The workman holds the block between his legs, puts the chisel against the side, and divides the block with a blow of his mallet. The *repartons* are divided in a similar manner into roofing slates and writing slates. These operations are performed soon after the block is drawn from the quarry; for if the stone has time to dry, it would no longer be possible to split it.

Perhaps the most remarkable reservoir of slate in Europe is at Hourston Crag, a lofty mountain near Buttermere Lake, in Cumberland: the mountain is nearly perpendicular, and rises to a height of 2000 feet above the level of the sea. On account of the difficulty of access, the workmen take their provisions for a whole week, and sleep in temporary huts, on the summit of the mountain. During the winter they are generally involved in clouds, and not unfrequently blocked up by snow. The slate is conveyed down a zigzag path on sledges, one man attending to prevent the acceleration of the descent. When the slate is emptied at the bottom of the hill, the man carries the sledge on his shoulders up to the top.

There is a considerable degree of strength in most kinds of slate, which makes it valuable for a variety

of purposes in building. The kind used for writing slates is of a smooth texture. It is reduced to a state of considerable thinness by cleavage, and by grinding, and thus presents the smooth surface which is familiar to us. Slates are generally fixed into slight wooden frames, both to save them from fracture by a fall, and to preserve the writing which may be on them. The making of these frames requires no particular comment.

Slate Pencils. These useful articles are made of a softer kind of slate than the material on which they are employed. This kind of slate frequently accompanies alum-slate, and contains a considerable portion of carbon. Some varieties have a slight degree of lustre, of which others present none. The fracture, when in small fragments, is not nearly so laminated, or scaly, as that of common slate. There are several different kinds of this slate, differing in some respects from one another, but all agreeing in the circumstance of being softer than the slates used as writing tablets. There is the common slate-pencil, which leaves a white mark on slate, of which the cylindrical pieces of *Dutch* pencil are the hardest: there is the grayish-black kind, principally used by masons, carpenters, &c., to mark with, as it leaves a black line when rubbed on paper or wood:—lastly, there is a very fine and pure kind used by artists, for designs, which is called in France, "Pierre d'Italie." And in England, "French chalk." This often undergoes preparation before it passes into the hands of the artist.

Ivory Writing Tablets. Among the materials which have been used instead of paper, as a substance on which to write, *ivory* may be shortly alluded to. Small memorandum or note books, in order to possess the required utility, should afford the means of erasing any writing which may be upon their surfaces, in order to make room for other memorandums. Several different materials have been employed for this purpose, one of which is ivory.

Ivory is the name given to the tusks of the elephant, and of the walrus, or sea-horse. These tusks are hollow at their insertion into the jaw, and for a considerable space from it. The colour of the exterior varies according to circumstances, but the interior is of a cream-white colour. The best elephants' tusks are brought from Africa, being better than those obtained from Asia, as being of a closer texture, and less likely to become yellow. But the hardest and whitest of all ivory, is that obtained from the tusks of the sea-horse. These tusks are short and very much curved; the thick end is hollow, as in the tusk of the elephant.

The manufacture of these tusks into articles of various kinds, is carried on in various places. In England, at Dieppe, in France, and in China and India, where the skill of the artists exceeds that of Europeans in the same branch of art. The preparation of ivory, for writing tablets, may be assimilated to that of the small tablets for miniature portraits, in water colours. The ivory is split into thin laminæ, or leaves, which are afterwards smoothed and polished, and in this form it furnishes a beautiful surface for either the pen or the pencil.

We may include under this same head various other contrivances as furnishing materials on which to write. There are "Asses' skin" memorandum books, "flexible tablets," "prepared tablets," &c. &c., which are familiar to all who visit stationers' shops. Instead of dwelling on the modes of manufacturing these several kinds of tables, we will briefly show the principle on which they act, for, however they may differ in other respects, they all act upon one principle. This principle is *non-absorption*. When we write on paper, why cannot we rub it out, either by dry friction or with the wet finger? Simply because the fibres of the paper have absorbed some of the ink into their very substance, from which it cannot again be extracted, except by scraping away the fibres themselves with a knife, or by the application of some strong agent which will act chemically on the ink.

But if we can shield the fibres from the action of the ink, we prevent the absorption, and ink marks can be again eradicated. Varnish of almost every kind presents us with a surface through which black-lead pencil marks, and ink marks, will not penetrate; so that almost every material which will receive a coating of varnish, may be made into a writing tablet. Sometimes the material employed is of a flexible nature, so as to yield in the convenient form of a book; while in other cases the material is stiff and unyielding. We can write on a French-polished mahogany table with a pen, and a moistened cloth will remove the ink; although, if we were to apply ink to the plain surface of the mahogany, before it received its coating of polish, the ink would be absorbed by the fibres, and a stain would be perceived. We could, in like manner, write on the surface of an oil-painted door, or wall, and afterwards eradicate the marks. In both of these last-mentioned instances, a thin fibre protects the fibres of the wood from the ink, which they would otherwise absorb; and thus the power of eradicating the marks which might be left, is afforded to us.

But generally speaking, writing tablets are not subjected to the severe test of receiving, and then parting with, the marks of ink flowing from a pen: a black-lead pencil being generally the marking material. This latter not being a fluid, its tendency to spread and to adhere is much smaller than that of ink, and it is therefore much more readily removed by a moistened finger.

It will therefore easily be understood how asses' skin, or any other flexible membrane covered with a species of varnish, will, in the first place, receive an impression from a black-lead pencil, and afterwards readily part with it by a little friction. It follows pretty clearly from these remarks, that the aptness of any particular substance for serving as a writing tablet, depends not so much on the material of which it consists, as on the texture of the surface, whether natural or artificial, which it presents. These general remarks will give a more correct notion of the nature of writing tablets than a particular description of all the novelties which from time to time spring up in this form. They all agree in principle, and differ only in minor details.

GENIUS, strictly speaking, is only entitled to respect when it promotes the peace, and improves the happiness and comfort of mankind. What should we think of the Gardener who planted his flower-bed with henbane and deadly nightshade? What should we think of the General, who being intrusted with an army, and a plentiful supply of military stores, applied these powers to degrading and enslaving his own country? He would be visited with scorn, and punished as a traitor. And why should the man who directs the artillery of his genius, delegated to him for high and holy purposes, to shaking those foundations on which the happiness of his species rests, and who applies the divine spark within him to the kindling of low and debasing passions, be allowed to hear his plaudits swelled in proportion as his powers of doing mischief become apparent. Talent is always accompanied with the responsibility of using it rightly; and the neglect or pity of the virtuous is the penalty which the child of genius pays, or ought to pay, for its abuse.

However splendid talents may compel our admiration, they have no right to claim the general esteem of mankind when their possessor exercises them without regard of what is due to the well-being of society and himself.—*Essex Lit. Gaz.*

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